

The compact, economical TESC-2983 (thermoelectric sample conditioner) viscometer system provides outstanding precision for the new ASTM D2983 automated Procedure D conditioning and testing process for low temperature viscosity analysis of gear oils, ATF and more.

Common Applications

- Gear oils
- Automatic transmission fluids
- Torque and tractor fluids
- Industrial and automotive hydraulic oils
- Industrial lubricants
- Other fluids where low-temperature viscosity is critical

TESC-2983 Thermoelectric Sample Conditioner System

For Low Temperature Viscosity of Lubricants
ASTM D2983 (new automated Procedure D) and ASTM D8210

Product Features & Benefits

Superior precision in fully automated thermal conditioning and testing (-40 °C to +90 °C)

- Provides unsurpassed results for ASTM D2983 automated procedure D sample conditioning and testing
- Allows for unattended operation
- Eliminates sample disruption during preheating, room temperature stabilization, cooling and final viscosity testing
- Reduces result variability due to temperature fluctuation and operator intervention

Cost effective, ultra-compact design with low energy consumption

- Small footprint conserves bench space and allows installation of multiple TESC systems, providing redundancy and multiple temperature cycles
- Dedicated PC is not required for standard instrument operation*
- Only 300 W power per unit

Environmentally-friendly Peltier thermoelectric cooling

- Peltier cooling is environmentally friendly and does not require the use of hazardous bath fluids or refrigerants
- Enclosed insulated sample chamber mitigates the effects of laboratory air temperature on the test

Pre-developed test programs for common lubricants (gear oil and ATF)

- Reduces instrument set-up time
- Measures and records viscosity at multiple speeds automatically

Easy-lift system

- Includes the advanced Brookfield® DV2T rotational viscometer with color touchscreen interface
- Simplifies positioning of the viscometer head

Digital recording, printing and exporting of thermal test history and final viscosity data for convenient import into Microsoft® Excel® or other programs

*A PC is required to reprogram the unit for tests other than gear oil at -40 °C



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TESC-2983 | Thermoelectric Sample Conditioner System

Ordering Information

TESC-2983 Thermoelectric Sample Conditioner System includes the thermoelectric sample conditioner unit, Brookfield® DV2T viscometer and support, temperature control software, #4B2 spindle, EZ-Lock spindle coupling, pre-loaded test programs on USB memory stick, USB to RS-485 cable, test cells (12 pack), 20 mL plastic syringes (5 each), and CL 160 viscosity reference standard (500 mL). The unit is pre-calibrated for testing gear oil at -40 °C. Specify desired factory installed options when ordering. A computer is not required for normal operation but is required if reprogramming instrument test parameters.

Description	Part #
100 V _{AC} - 240 V _{AC} , 50/60 Hz	9725-F81

Options

Alternative sample/temperature calibration (other than gear oil at -40 °C) may be available for an added charge at the time of ordering.

Accessories & Consumables

Description	Part #
Test cells (case of 72); 25 mm OD x 150 mm, rimless, disposable	9725-F83
Test cells (pkg of 12); 25 mm OD x 150 mm, rimless, disposable	9725-F84
Viscosity reference standard CL 600 (~9,500 cP at -10 °C and -12 °C)	9727-N36.016
Viscosity reference standard CL 340 (~9,500 cP at -20 °C)	9727-N31.016
Viscosity reference standard CL 280 (~9,000 cP at -26 °C)	9727-N26.016
Viscosity reference standard CL 240 (~9,000 cP at -30 °C)	9727-N20.016
Viscosity reference standard CL 160 (~10,000 cP at -40 °C)	9727-N12.016
Viscosity reference standard N27C (~40,000 cP at -40 °C and ~7,000 cP at -26 °C)	9727-G12.016
Viscosity reference standard N115B (~95,000 cP at -26 °C and ~17,000 cP at -12 °C)	9727-G15.016
Viscosity reference standard N14B (17,000 cP at -40 °C)	9727-G65.016
Viscosity reference standard N120B (150,000 cP at -40 °C)	9727-G30.016
Viscosity reference standard N480B (150,000 cP at -26 °C)	9727-G35.016
Viscosity reference standard N1400B (150,000 cP at -12 °C)	9727-G40.016
Brookfield® #4B2 insulated spindle (replacement)	17.5128
Brookfield® EZ-Lock spindle coupling (replacement)	17.5129
Plastic syringe, 20 mL	17.5133

Product Specifications

Dimensions (W x D x H)	16.5 cm x 51 cm x 76 cm (6.5 in x 20 in x 30 in)
Weight	19.5 kg (43 lb) including DV2T viscometer
Shipping dimension (W x D x H)	73.7 cm x 71.1 cm x 58.4 cm (29 in x 28 in x 23 in)
Shipping weight (with all items)	34 kg (75 lb)
Sample capacity	1
Temperature range & accuracy	-40 °C to +90 °C (± 0.1 °C)
Minimum sample volume	~20 mL
Operating conditions	15 °C to 30 °C, 10% to 75% relative humidity (non-condensing), Installation Category II, Pollution Degree 2
Electrical specifications	100 V _{AC} - 240 V _{AC} , 50/60 Hz; 300 watts power consumption
Compliance	CE Mark; EMC directive (2004/108/EC); Low voltage directive (2006/95/EC); ROHS
Data output	USB and RS-485

CANNON Instrument Company® provides a variety of physical property testing equipment and consumables (vials, bath fluids, and reference materials) for your testing needs. To learn more, contact sales@cannoninstrument.com.

ASTM D2983 Procedure D Comparison

Features & Benefits	ASTM D2983-19 Procedures			
	A	B	C	D
Cooling Technology				
- Mechanical refrigeration with CFC	✓	✓	✓	
- Solid-state Peltier (non-CFC)				✓
- Flammable bath liquid		✓	✓	
Operator Intervention	high		moderate	low
Size/ Benchspace	large floor mount		large benchtop	small benchtop
Energy Consumption	high		moderate	low
Precision				
- Repeatability			13.5%	8.4%
- Reproducibility			18.1%	9.7%
Environmentally Friendly			no	yes



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